



Fire Sprinkler and Fire Department Connection (FDC) Standard

A. Purpose: This document provides fire sprinkler designers, installers, plan reviewers, inspectors, and building owners with important information regarding the requirements for fire sprinkler systems within South County Fire's (SCF) incorporated response area.

It is intended to provide consistency between all parties during plan design, submittal, review, installation, inspecting and testing of new and existing fire sprinkler systems.

B. Scope: The information contained within this document details the local amendments to the International Fire and Building Codes, applicable NFPA codes, Washington Administrative Code and the Revised Code of Washington. Whenever a requirement in this document conflicts with a requirement from a published code, the requirement in this document shall prevail. Nothing in this document shall prevent the fire code official from modifying these requirements as necessary, based on circumstances, to provide an acceptable level of protection.

C. Design and Installation:

1. Fire sprinkler submittals for new buildings, buildings undergoing a change of use, or buildings undergoing major modifications shall include an *NFPA Owner's Certificate* indicating the use of the building including the materials within the building and the maximum height of any storage as per NFPA 13, section 4.3.
2. When a building is required to be equipped with a fire sprinkler system, the system shall provide protection throughout the structure or as approved by the fire code official.
3. Hydraulically designed systems shall be calculated to provide a 10% safety margin in addition to the required system demand of 20 psi residual pressure.
4. Hydraulic calculations shall include all underground piping from the point of connection to the public water supply.
5. All drains (low point, auxiliary, test, main, etc.) shall be plumbed to the exterior of the building.



6. All valves (control, drain, etc.) shall be readily accessible and reachable without the use of a ladder.

Exception: valves in a pit or underground and or as approved by the fire code official.

7. Floor control valves shall be located at the point of connection to the riser on each floor and shall be provided with the following: Flow switch, check valve, main drain, pressure relief valve, pressure gauge and tamper switch.

8. Flexible sprinkler piping shall not be used in pipe-schedule systems unless specifically listed for such use.

9. The use of heat tape on fire sprinkler systems is allowed in accordance with NFPA 13, and must be monitored by the fire alarm system as a trouble signal.

10. Sprinklers shall be provided in the elevator machine room, elevator pit and at the top of the elevator shaft. These heads shall be supplied from a normally open supervised control valve(s).

Exception: Elevator protection is not required in 13D systems.

11. Any sprinkler component, device, piping, etc. that is no longer in service or not being used shall be removed. This includes excessive branch line arm-over piping supplying a sprinkler head.

12. Field changes in the sprinkler installation from the approved design/plan must be approved by the sprinkler designer and accepted by the fire code official via a permit application revision.

13. Exposed insulation located above sprinkler heads shall be supported by a minimum 24"x24" non-combustible wire mesh.

14. All plans and calculations shall be stamped with a valid Washington State certificate seal identifying the appropriate level of competency.

15. Anti-freeze systems are prohibited.



D. Sprinkler Riser Rooms:

1. Sprinkler riser rooms for NFPA 13 and 13R systems shall be located on an outside wall at grade or as approved by the fire code official.
2. The riser room shall contain all sprinkler control valves, backflow assembly (unless prohibited by the water purveyor), fire pump, if provided, and the fire alarm control panel(s). No other uses or utilities including storage shall be allowed in the riser room.
3. Riser rooms shall be of a size that will allow a minimum of 36" clearance along the front of all riser(s) and equipment and a minimum of at least 18" on the three remaining sides of all sprinkler risers, pumps and appurtenances
4. Major building remodels or square footage increases may elicit the need to construct an exterior accessible riser room if not previously existing as approved by the fire code official.
5. An all-weather RED placard with 2" white lettering reading "FIRE SPRINKLER CONTROL ROOM" shall be permanently affixed to the EXTERIOR of the riser room door at a height of 72", or at a location approved by the fire code official.
6. An all-weather red placard with 1" white lettering reading "NO STORAGE" shall be permanently affixed to the EXTERIOR of the riser room directly below the "FIRE SPRINKLER CONTROL ROOM" sign.
7. An all-weather RED placard with 2" white lettering reading "NO STORAGE ALLOWED" shall be permanently affixed to at least one INTERIOR wall of the riser room in a readily visible location.
8. A Knox brand box shall be installed on the exterior of the riser room door and at the main entrance to all buildings in accordance with SCF's Emergency Access Standard. The box shall be installed at a height of 60-72". Boxes are available at www.knoxbox.com.
9. Riser rooms shall be provided with map(s) showing what areas of the building are covered by the system(s). These map(s) shall indicate the building layout, location of all sprinkler zones, standpipe outlets, control valves, water-flow alarm devices, and remote drains. All maps shall be legible, easily understood, laminated and permanently attached to the wall in the riser room.



E. NFPA 13 and 13R Systems:

1. Existing sprinkler deficiencies including piping without adequate seismic bracing, hangers, painted heads, inadequate sprinkler coverage, etc. shall be corrected whenever the sprinkler system is modified. The area of these upgrades shall be throughout the area of sprinkler modification.
2. Sprinkler protection for R1 and R2 shall be provided to all exterior balconies, decks, exterior egress paths, and ground floor patios provided there is a roof or deck above. Sidewall sprinklers that are used to protect such areas shall be permitted to be located such that their deflectors are with 1 inch to 6 inches below the structural members and a maximum distance of 14 inches below the deck of the exterior balconies and decks that are constructed of open wood joist construction.
3. Sprinkler protection shall be extended to combustible attic(s) of R1 and R2 occupancies greater than three floors in height.
4. All "M", "S" and "H" Occupancy (as defined by the IBC) canopies and overhangs that exceed 4 feet in width shall be provided with fire sprinklers regardless of construction type.

F. NFPA 13D Systems:

1. All systems shall include a main pressure gauge and a main drain plumbed to the exterior for fire operations and maintenance purposes.
2. Sprinkler supply risers shall be connected to the domestic plumbing supply in such a manner that prevents the sprinkler system from being shut off without turning off the main domestic water supply.
2. For flow-through systems a sink or toilet shall be connected to the sprinkler system with at least one domestic connection on each floor.
3. All fueled fired equipment (water heater, furnace, BBQ, exterior heaters, etc.) shall be protected by a minimum of one (1) sprinkler head, including appliances on outdoor covered projections greater than 48".
4. A red placard with one-half inch ($\frac{1}{2}$ ") white lettering reading "THIS VALVE SHUTS OFF THE DOMESTIC WATER AND FIRE SPRINKLER SYSTEM" is to be permanently installed at the main valve location and any additional signs required by NFPA 13D.



5. CPVC 13D sprinkler systems shall be hydrostatically tested to 200 psi for at least 30 minutes.
6. PEX 13D sprinkler system shall be hydrostatically tested in accordance with the manufacturers requirements.

G. Fire Department Connections:

1. Shall be installed remote from the building or as approved by the fire code official.
2. Located out of the collapse zone, or as approved by the fire code official.
3. In an approved location along a public street or fire apparatus access road.
4. Located within 50' of a fire hydrant.
5. Shall be equipped with a 4" storz adapter and a 30/120 degree downturn.
6. Be painted red and labeled with the building address. Partial systems shall indicate the area covered by the system.
7. Be provided with additional signage as required by NFPA 13.

H. Testing/Maintenance:

1. Testing of fire sprinkler systems, fire pumps, standpipes, suppression systems and associated components/equipment shall be in accordance with the appropriate NFPA standard.
2. Service providers hired by the building owner are responsible for electronically submitting completed annual confidence test reports of sprinkler systems, fire pumps, suppression systems, and standpipes to the appropriate fire prevention offices' online reporting system within 14 days of the completed inspection.

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